EXHIBIT D

#4/ Ext of Time (3) w/ Amdt A R. Morgan 12/2/97

Patents

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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant(s):J. Salazar **Group Art Unit:**2608

Serial No.: 08/535,801 **Examiner:** M. Wyche

Filed: 9/28/95

For: WIRELESS AND WIRED COMMUNICATIONS, COMMAND, CONTROL AND SENSING SYSTEM FOR SOUND AND/OR DATA TRANSMISSION AND RECEPTION

Commissioner Of Patents and
Trademarks
Washington, D.C. 20231

Amendment

Dear Sir:

In response to an Office Action dated May 1, 1997, please amend the above-identified application as follows:

In The Claims

1 (Amended). A communications, command, control and sensing system for communicating with a plurality of external devices comprising:

a microprocessor for generating a plurality of [predetermined] control signals used to operate said system, said microprocessor creating a plurality of reprogrammable communication protocols, for transmission to said external devices wherein each communication protocol includes a command code set that defines the signals that are employed to communicate with each one of said external devices;

A, cont.

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a memory device coupled to said microprocessor configured to store a plurality of parameter sets retrieved by said microprocessor so as to recreate a desired command code set, such that the memory space required to store said parameters is smaller than the memory space required to store said command code sets;

a user interface coupled to said microprocessor for sending a plurality of signals corresponding to user selections to said microprocessor and displaying a plurality of menu selections available for the user's choice, said microprocessor [selecting] generating a communication protocol in response to said user selections; and

A1 cont.

an infra-red frequency transceiver coupled to said microprocessor for transmitting to said external devices and receiving from said external devices, infra-red frequency signals in accordance with said communications protocols.

2. (Amended). The communication, command, control and sensing system of claim 1 further comprising:

a radio frequency transceiver coupled to said microprocessor for transmitting to said external devices and receiving from said devices, radio frequency signals at variable frequencies within a predetermined frequency range and in accordance with said communication protocols; and

a selector controlled by said microprocessor for enabling said radio frequency transceiver and said infra-red frequency transceiver to transmit a desired command code set generated by said microprocessor via either radio frequency signals and infra-red signals as desired, and to receive a signal from any one of said external devices via either

C1

A1 cont. radio frequency signals and infra-red signals [in accordance to said user selection].

5 (Amended). The communications, command, control and sensing system of claim 4, wherein said touch sensitive device is a touch screen having a plurality of [user] replaceable [overlays.] icon sets, wherein each set is configured to be displayed on said touch screen so as to designate a desired set of functions to each one of said icon sets.

A2

6 (Amended). The communications, command, control and sensing system of claim 1, further comprising a [voice] sound activated device coupled to said microprocessor, said [voice] sound activated device used to recognize [predetermined voice] sound signals including sound commands corresponding to executable logical commands, said [voice] sound activated device generating signals in response to recognized [voice commands] sound signals for further processing by said microprocessor.

8 (Amended). The communications, command, control and sensing system of claim 6, further comprising a [voice] sound recorder and playback device coupled to said microprocessor, said [voice] sound recorder and playback device used for recording [user generated voice] sound signals, said microprocessor [retrieving] responding to said recorded sound signals [said recorded user generated signals]at a later time[.]

A3

10 (Amended). A handset and a base station employed in a communications, command, control and sensing system for communicating with a plurality of

A4 cont.

external devices, said handset and [sound] base station each comprising:

a microprocessor for generating a plurality of [predetermined] control signals used to operate said system [communication device], said microprocessor creating a plurality of communication protocols for transmission to said external devices, each protocol containing a plurality of control signals used to interface with an external device ,wherein each communication protocol includes a command code set that defines the signals that are employed to communicate with each one of said external devices;

a memory device coupled to said microprocessor configured to store a plurality of parameter sets retrieved by said microprocessor so as to recreate a desired command code set, such that the memory space required to store said parameters is smaller than the memory space required to store said command code sets;

A4 cont.

a user interface coupled to said microprocessor for sending a plurality of signals corresponding to user selections to said microprocessor, and displaying a plurality or menu selections available for user's choice, said microprocessor [selecting] generating a communication protocol in response to said user selections;

a radio frequency transceiver coupled to said microprocessor fro transmitting to said external devices and receiving from said external devices, radio frequency signals at variable frequencies within a predetermined frequency range and in accordance with said communication protocols;

an infra-red frequency transceiver coupled to said microprocessor for transmitting to said external devices and receiving from said external devices [;] infra-red frequency signals in accordance with said communications protocols;

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a selector controlled by said microprocessor for enabling said radio frequency transceiver and said infra-red frequency transceiver, to transmit a desired command code set generated by said microprocessor via either radio frequency signals and infra-red signals as desired, and to receive a signal from any one of said external devices via either radio frequency signals and infra-red signals [in accordance to said user selections]; and

A4 cont.

a data detector coupled to said selector for receiving signals transmitted from each one of said external devices, said data detector providing control signals received from said external devices to said microprocessor.

C

Please delete claim 11, without prejudice.

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~~17~~ (Amended). The communications, command, control and sensing system of claim ~~16~~ 15, wherein said touch sensitive device is a touch screen having a plurality of [user] replaceable [overlays] icon sets, so as to designate a desired set of functions to each one of said icon sets.

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~~24~~ (Amended). The communications command, control and sensing system of claim [23] 10, further comprising [a] at least one sensor located on either of said handset and base station, said sensor coupled to said microprocessor for detecting and measuring physical phenomena.

A6

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Please add the following claims:

C4

--~~38.~~ 27 The communications, command, control and sensing system of claim 1 wherein one of said parameter sets stored corresponding to one of said command code sets is accessible for use so as to create other command code sets.

~~39.~~ 28 The communications, command, control and sensing system of claim ~~38~~ 27, wherein said microprocessor is configured to concurrently generate more than one command code sets so as to allow said user interface to control more than one corresponding external devices among said plurality of external devices.

~~40~~ 29 The communications, command, control and sensing system of claim 1, further comprising a sensor coupled to said microprocessor for detecting and measuring physical phenomena corresponding to said user.

A7 cont.

~~41.~~ 30 The communications, command, control and sensing system of claim ~~40~~ 29 wherein said sensor measures said user's physical indications.

~~42.~~ 31 The communications, command, control and sensing system of claim ~~24~~ 23 wherein said physical phenomena corresponds to said user.

~~43.~~ 32 The communications, command, control and sensing system of claim ~~42~~ 31 wherein said physical phenomena is measured in response to said user's skin contact with said sensor.

C5

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~~44.~~ The communications, command, control and sensing system of claim 31 ~~42~~ wherein said physical phenomena includes said user's heart bit and temperature.

34
~~45~~ A communications, command, control and sensing system for communicating with a plurality of external devices comprising:

a microprocessor for generating a plurality of control signals used to operate said system, said microprocessor creating a plurality of reprogrammable communication protocols for transmission to said external devices wherein each communication protocol includes a command code set that defines the signals that are employed to communicate with each one of said external devices;

A3 cont.

a memory device coupled to said microprocessor configured to store a plurality of parameter sets retrieved by said microprocessor so as to recreate based on said parameter sets a desired set of pulse signals corresponding to logical "1's" and "0's" as specified by a command code set;

a user interface coupled to said microprocessor for sending a plurality of signals corresponding to user selections to said microprocessor and displaying a plurality of menu selections available for the user's choice, said microprocessor generating a communication protocol in response to said user selections; and

an infra-red frequency transceiver coupled to said microprocessor for transmitting to said external devices and receiving from said external devices, infra-red frequency signals in accordance with said communications protocols. --

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REMARKS

Applicant submits this Amendment in response to an outstanding Office Action dated June 1, 1997, along with an Amendment Transmittal form, and a Petition for Extension of Time to file the Amendment. Claims 1-2, 5-6, 8, 10 and 17 have been amended. Claim 11 has been deleted without prejudice. Claims 38-45 have been added. These amendments have been made consistent with the Examiner's earlier restriction requirements. No new matter has been added.

In response to the Examiner's § 112 objection to claim 10, Applicant has amended the claim to provide a sufficient antecedant basis. As such, the Examiner's withdrawal of the §112 objection is respectfully requested.

Turning to prior art rejections, the Examiner has rejected claims 1 and 10 under 35 U.S.C. §103 (a) as being obvious over Krisbergh in view of Vanttinen and Amano references. According to the Examiner Krisbergh discloses a telephone base station and handset for remote control of multiple appliances that includes a microprocessor capable of generating a plurality of predetermined control signals used to operate said system, said microprocessor creating a plurality of reprogrammable communication protocols for transmission to said external devices. The Examiner further contends that Krisbergh discloses a user interface coupled to the microprocessor for sending a plurality of signals corresponding to user selections to said microprocessor and displaying a plurality of menu selections available for the user's choice. The Examiner further states that Krisbergh discloses that the microprocessor selects a communication protocol in response to the user's selections.

The Examiner further asserts that the other two references -- Vanttinen and Amano -- disclose the remaining elements of claim 1. Specifically, the Examiner states that Vanttinen discloses a telephone device and handset that use two-way infrared communications and provides remote control capabilities for a plurality of other electronic devices. In addition, according to the Examiner, Amano discloses a remote control device for a plurality of electronic devices that uses two-way infrared communications for the communication of control signals.

With respect to claim 10, the Examiner further asserts that Krisbergh discloses a selector controlled by said microprocessor for enabling said radio frequency transceiver and said infra-red frequency transceiver, in accordance to said user selections. The Examiner also contends that Krisbergh and Amano disclose a data detector coupled to a selector for receiving signals transmitted from each one of the external devices so as to provide control signals received from the external devices to the microprocessor. Applicant respectfully disagrees with the Examiner and requests that the §103 rejection of these claims be withdrawn.

The present invention relates to a communication system that is capable of transmitting and receiving signals to a plurality of different devices in accordance with a communication protocol that is necessary to communicate with these devices. Compared to prior art devices, the system is capable to send and receive many more types of signals to and from a plurality of devices, regardless of the type of the protocol that is required to communicate with a remote device. As stated on page 4, lines 14-18, one of the objects of the present invention is:

> to use a microprocessor and a generalized signal generation or control software to provide a flexible way to add accessory appliances or apparatuses without having to buy additional, non-compatible, hand-held remote control or other wireless communication devices.

As further stated on page 14, lines 9-22, in accordance with one embodiment of the present invention, the communication system as claimed herein is capable to communicate with various devices by employing the communication protocols utilized by various manufacturers or various models of the same brand of external devices. Each of these communication protocols as used by various devices includes a command code set for performing various functions so as to allow a user to remotely control an external device. Each command code set comprises a set of signals, wherein each signal is utilized to perform an available function on the external device. One example mentioned on page 14 is the television that is made by different manufacturers wherein each one of these televisions require a different command code set that includes various signals to remotely control functions such as channel up, channel down, volume up, volume down, mute and power "on" and "off.." It is noted on page 15 liens 1-22, that a substantially large memory space is required to store all these various signals corresponding to different manufacturers and different external devices.

Thus, one of the features of the present invention is to alleviate the requirement for such a large memory space. The amount of required memory space is substantially reduced so as to communicate with a plurality of devices via different signals by providing a memory that stores information as stated on page 16, lines 3-6:

> [A] memory device, such as a RAM, ROM, EPROM or EEPROM, ...is configured to store a finite set of parameters that may be used to recreate and generate signals corresponding to a desired command code set. These parameters take substantially less memory space than if the entire signal were to be stored. (emphasis added)

Therefore, instead of storing actual signals that are employed to communicate with external devices, in accordance with one embodiment of the present invention, a set of parameters are stored in the memory, and the actual signals are recreated or reconstructed based on the information provided by these parameters as stored. This feature allows the communication system to have an open architecture, so that the microprocessor can be reprogrammed so that proper signals corresponding to a new device can be recreated by storing or varying the parameters related to the new device.

Furthermore, in accordance with one embodiment of the present invention, as stated on pages 21-24, the pulse signals corresponding to logical "1's" and "0's" in a command code set are also recreated based on the parameters stored in the memory device.

Another feature of the present invention, as disclosed in one embodiment is the ability to communicate the same signal via either radio-frequency (RF) or infra-red frequency (IR) signals. As illustrated in Fig. 3 and the accompanying description, a handset or a base station of one embodiment of the communication system of the present invention, is capable of transmitting signals to or receiving signals from the same external device in either RF or IR mode. This feature allows the user to select a desired mode based on, for example, environmental factors or range of communication with the external device.

An additional feature of the present invention, as disclosed in the embodiments is the sensor that is located on the handset and/or the base station for measuring physical phenomena, such as the user's physiological indications like heart beat and temperature. As illustrated in Figs. 2 and 4, sensors 80 and 120 respectively, are configured to receive such physical phenomena so as to allow the microprocessor to process this data and/or send it to a

remote facility such as a medical institution. See pp 42-42, and p.48, lines 7-19.

The references cited by the Examiner either alone or in combination do not even discuss the problems solved by the present invention, nor do they, disclose or teach the features of the present invention as claimed. For example, Krisbergh does not teach or disclose a communication system that includes a microprocessor that creates a plurality of reprogrammable communication protocols. Furthermore, Krisbergh does not teach or suggest a memory device that is configured to store a plurality of parameter sets that may be retrieved by the microprocessor so as to recreate a desired command code set. Similarly, Vanttinen does not address the storage of control signals in the manner contemplated in accordance with one embodiment of the present invention. Amano is also inapposite. Amano describes a multi-commander remote controller that stores a plurality of remote control signals having different signal formats. This multi-commander stores the actual signals, which leads to the same memory space problems that have been addressed and overcome by the present invention.

Even if the cited references were to be combined as suggested by the Examiner, the resultant device would still fall outside the scope of the present claims 1 and 10. For example, the resultant device would still lack a microprocessor that is configured to create a plurality of reprogrammable communication protocols. It would also lack a memory device coupled to the microprocessor to store a plurality of parameter sets that may be retrieved by the microprocessor so as to recreate a desired command code set that defines the signals that are employed to communicate with the external devices.

Furthermore, with respect to claim 10, none of the references cited by the Examiner, teach or suggest the features cited in that claim. For example, none of the references

disclose a selector that allows the transmission and reception of the same signals via either radio frequency (RF) range or infra-red frequency (IR) range as desired. Krisbergh's system does not even includes an IR transceiver. Furthermore the remote control of Krisbergh communicates with an external device, such as the TV in IR range and communicates, the speech signals with the telephone base unit in RF range. There is no selector in Krisbergh that allows communication with external devices in a dual frequency range as selected by the user.

Similarly, with respect to Vanttinen, not only the system lacks this selection feature as well, but also, Vanttinen's disclosure teaches away the use of any RF communication. For example, col.1, lines 13-17 of Vanttinen states:

> An IR connection in a telephone system has in comparison to known radio frequency connections also the advantage that generally no approval from the authorities is required, and further the IR arrangement has a simpler configuration.

As such, Applicant requests that the Examiner rejection with respect to claims 1 and 10 be withdrawn.

In the Office Action, the Examiner has also rejected claim 2 in view of Krisbergh. According to the Examiner, Krisbergh includes both a radio frequency transceiver and a selector as stated in claim 2. Applicant disagrees and respectfully requests that the Examiner's rejection of claim 2 be withdrawn.

As previously stated Krisbergh does not disclose a selector that allows the transmission and reception of signals via either radio frequency (RF) range or infra-red frequency (IR) range as desired. Krisbergh's system does not even include an IR transceiver for sending and receiving signals in IR range. Furthermore the remote control of Krisbergh communicates

with an external device, such as the TV in IR range and communicates, the speech signals with the telephone base unit in RF range. There is no selector in Krisbergh that allows communication with external devices in a dual frequency range as selected by the user. Applicant submits that for this reason alone, claim 2 is deemed allowable.

Claims 3, 4, 7, 9, and 12- 17, depend from claims 1 and 10 respectively, and at least for the same reasons stated in reference with these claims are deemed allowable. Applicant respectfully request that the rejection to these claims be withdrawn.

In the Office Action, the Examiner has rejected claims 5 and 17 under 35 U.S.C. § 103(a) as being obvious over Krisbergh in view of Vanttinen, Amano and Tyneski. In accordance to the Examiner, Tyneski discloses a handset for a communication device that includes a touch screen having a plurality of user replaceable overlays. Applicant respectfully disagrees and requests that the § 103 rejection of claims 5 and 17 be withdrawn based on the remarks made by the Applicant in reference with claims 1 and 10 above and for additional reasons stated hereinafter.

Specifically, contrary to the Examiner's assertion, Tyneski describes a cordless phone with one flap that is connected to the touch sensitive display via hinges. When the flap is in the closed position, certain keys on the flap are positioned on appropriate places on the touch screen.

In sharp contrast with Tyneski, the present invention as stated in claims 5 and 17 includes a plurality of icon sets, wherein each set of icons is displayed on the touch screen for allowing the user to select and execute a plurality of functions related to the corresponding set of icons .See p.39, lines 3-10. There is no teaching or suggestion in Tyneski to provide for such an

arrangement for providing a replaceable template of icon sets. As such, Applicant respectfully request that § 103 rejection of claims 5 and 17 be withdrawn.

In the Office Action, the Examiner has rejected claims 8-9 under 35 U.S.C. § 103(a) as being obvious in view of Ohashi. According to the Examiner, Ohashi discloses a voice recorder and playback device coupled to a microprocessor as set forth in the present claims. Furthermore, the Examiner contends that Ohashi discloses a speaker coupled to the voice recorder and playback device for playing back recorded user generated signals. Applicant respectfully disagrees and requests that the § 103 rejection of claims 8 and 9 be withdrawn based on the remarks made by the Applicant in reference with claims 1 and 10 above and for additional reasons stated hereinafter.

Ohashi discloses a system that "associates" voice tags with phone numbers stored in memory. A user discriminates the voice tags that are played back so as to select the phone number associated with that tag. Thus, a plurality of names are stored as voice tags. The user is required to recognize the calling party's name and upon such recognition and selection have the associated number with that name dialed automatically.

In sharp contrast with Ohashi the present invention as claimed in claims 8-9 calls for features that are not disclosed or suggested by Ohashi. For example, the communication system as claimed includes an arrangement wherein voice messages and voice commands are stored for later execution by the microprocessor. Ohashi only stores voice tags, which as an example includes names of parties to be called. There is no teaching or disclosure in Ohashi to store executable voice commands that may be executed at a later time as desired. As such, Applicants request that § 103 rejection of claims 8-9 be withdrawn.

With respect to the remaining claims, although dependent from claims 1 and 10, Applicant submits that none of the references cited by the Examiner teach or disclose the additional features stated in those dependent claims.

For example, with respect to claim 6, the Examine has cited Kero for the proposition that it teaches the features called for in that claim. Applicant respectfully disagrees. There is no teaching or suggestion in Kero for a system that recognized voice commands. Kero discloses a voice telephone directory with a voice server that is resident at a telephone company's central office. It further describes voice prompts for the selection of a telephone number and the dialing of said number. There are no general purpose control signals generated by Kero's handset.

Additional claims 38-45 are deemed allowable in view of the above remarks. Support for these claims may be found in the specification. For example, pages 16 and 17 provide ample support for claims 38 and 39. Pages 21-24 provide support for claim 40.

In view of the foregoing, Applicants respectfully submit that the claims in this application are in condition for allowance, and such action is respectfully solicited. The

Examiner is invited to contact the undersigned with any additional questions or comments.

Respectfully Submitted,

SOFER & HAROUN, L.L.P.

Dated: October 31, 1997

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